FIVE YEAR REVIEW

TOWN GARAGE/RADIO BEACON SUPERFUND SITE
LONDONDERRY, NEW HAMPSHIRE

CERCLIS ID. #NHD981063860

Prepared by:

U.S. Environmental Protection Agency
Region 1
Boston, Massachusetts

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I. Introduction

Purpose

EPA Region I performed a five-year review of the Town Garage/Radio Beacon Site pursuant to CERCLA section 121(c), NCP section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991), and 9355.7-02A (July 26, 1994). It is a policy review because unrestricted use of the property will be allowed once groundwater remedial action objectives are achieved. The purpose of this five-year review is to ensure that the remedial action remains protective of public health and the environment and is functioning as designed. This document will become a part of the Site file. This report is a Type I level review which is appropriate at sites where circumstances which may compromise protectiveness are not present.

Site Characteristics

The Town Garage/Radio Beacon Superfund Site is located north of Pillsbury Road near the intersection of Pillsbury and High Range Roads in Londonderry, New Hampshire. The Site study area encompassed a residential development of 23 homes (Holton Circle), the Londonderry town garage area located on High Range Road, and a formerly undeveloped hillslope and wetland area between the town garage and Holton Circle (see attached figure). A residential subdivision of 12 homes (Saddleback Road) was recently constructed on the hillslope area.

All homes in the Saddleback Road subdivision are attached to a public water supply. Nine homes in the Holton Circle subdivision remain on private wells since they have a long history of remaining unaffected by the groundwater contamination.

The Site was discovered in 1984 following a request to the State by residents of the Holton Circle subdivision to sample their bedrock wells. Sampling results from the New Hampshire Department of Environmental Services (NHDES) revealed the presence of volatile organic compounds (VOCs) in several of the residential drinking water wells and the nearby town garage well. The major contaminants detected include 1,1 dichloroethene (1,1-DCE); 1,1 dichloroethane (1,1-DCA); and 1,1,1 trichloroethane (1,1,1-TCA) at levels above federal and state primary drinking water standards. Four non site-related metals; barium, beryllium, chromium and antimony were also discovered at concentrations in excess of drinking water standards. The Site was added to the National Priorities List (NPL) in March 1992.

A Record of Decision (ROD) was issued on September 30, 1992 and called for natural attenuation of VOC contaminants in groundwater with ongoing monitoring and the establishment of institutional controls to ensure that groundwater would not be used as a potable source until federal and state drinking water standards are achieved. With regard to metals, the ROD concluded that elevated concentrations were probably due to sampling artifacts and not representative of actual conditions. Re-sampling of groundwater by an improved method (low-flow) was required to verify actual conditions. Groundwater monitoring was performed by the NH DES until a Unilateral Administrative Order was issued to the Town of Londonderry on

September 30, 1996. The Town was the only potentially-responsible party identified for the Site. The Town implemented required institutional controls and hired a consultant to perform continued groundwater monitoring.

II. Remedial Action Objectives

EPA's primary responsibility at this Site, and all Superfund sites, is to undertake remedial actions that are protective of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences, including a requirement that EPA's remedial action, when complete, must comply with all federal and more stringent state environmental standards, requirements, criteria or limitations. Response alternatives were developed to be consistent with these requirements.

Remedial action objectives were developed to aid in the screening of response alternatives and were developed to mitigate existing and future potential threats to public health and the environment. The remedial action objectives, as specified in the Record of Decision (ROD) are:

1. Prevent ingestion of water which contains compounds in concentrations that exceed federal and state enforceable drinking water standards;

2. Prevent ingestion of water containing compounds which have no enforceable federal or state drinking water standards but which pose an unacceptable health risk; and

3. Restore groundwater quality to federal and state drinking water standards.

The ROD estimated that natural attenuation would require seven to twenty-five years to reduce contaminants to below drinking water standards. Since the ROD was approved, six years of annual groundwater monitoring have been performed at nine overburden and eight bedrock well locations.

In general, contaminant levels have dropped substantially in the overburden aquifer and have decreased slightly or remained constant in the bedrock aquifer (with one exception), since initial post-ROD sampling in 1994. The table below demonstrates the change in contaminant levels at key monitoring wells.

MW Location	Date		1,1 DCA ppb		1,1 DCE ppb		1,1,1 TCA ppb		Total VOCs ppb	
Cleanup Levels	June '94	Nov '98	81 ppb		7 ppb		200 ppb			
MW-2S			74	33	**18**	**8**	**790**	81	882	122
MW-2D-6*			**100**	**110**	**37**	**58**	**300**	150	437	318
MW-3D			11	7	5.8	4	BDL	BDL	16.8	11
MW-4D-3*			7.6	7	6.5	1	41	6	55.1	14
MW-5S			14	BDL	**21**	5	190	27	225	32
MW-6D-4*			5.2	16	BDL	7	BDL	BDL	5.2	23
MW-8D			48	5	**28**	3	BDL	BDL	76	8

* Multi-level bedrock wells (most contaminated zone was selected)
S - overburden well
D - bedrock well
BDL - below detection limit
Cleanup levels - federal MCLs or state AGQSs
Shaded columns are most recent November 98' data
Bold data exceed groundwater cleanup standards

As shown in the table above, only one overburden well (MW-2S) still contains 1,1 DCE at a level slightly in excess of it's drinking water standard. This well has shown a clear decreasing trend. In the bedrock, two wells (MW-2D and MW-6D) continue to exhibit levels of 1,1 DCE and 1,1 DCA in excess of drinking water standards. As anticipated, the rate of contaminant reduction in the bedrock is much slower than in the overburden. The slight increasing trend in DCE and DCA levels at MW-6D is likely attributable to the continued degradation of TCA.

Barium, beryllium, chromium and antimony were re-sampled using the low-flow sampling method. Results confirmed that actual concentrations did not exceed drinking water standards. Three rounds of subsequent monitoring were performed which verified this result. Metals were removed from the monitoring program.

Institutional Controls

As a condition for development, the Town of Londonderry required the developer, Stonemark Investments, Inc., to supply public water to the subdivision. Additionally, the Town of Londonderry applied for, and subsequently received, a Groundwater Management Permit from

NHDES in August 1997. Issuance of this permit prevents potable use of wells within the plume area. There are no known wells active within the current plume area.

III. ARARs Review

The primary applicable or relevant and appropriate requirements (ARARs), as listed in the ROD, include the chemical-specific group. Although there are a number of location and action-specific ARARs included in the ROD, these requirements were easily complied with since the remedy did not involve any physical activities. Consequently, a closer review of location and action-specific ARARs is not warranted.

The following chemical-specific ARARs are included in Appendix C of the ROD:

- Federal Clean Water Act (CWA § 304(a)) Ambient Water Quality Criteria
  - states that ambient water-quality criteria will be attained in the wetland surface water
- Federal Safe Drinking Water Act (40 CFR § 141.11 - 141.16 and 141.50 - 141.51)
  - states that groundwater throughout the plume will attain these standards
- Federal Maximum Concentration Limits (40 CFR § 264.94)
  - states that groundwater throughout the plume will attain these standards
- Federal Clean Air Act (40 CFR Part 50)
  - states that the selected clean-up action must not exceed air standards
- New Hampshire Primary Drinking Water Standards (Env-ws Parts 315 - 319)
  - states that groundwater throughout the plume will attain these standards

None of the above-listed standards are known to have been modified. Federal and state drinking water standards have been attained for the metals barium, beryllium, chromium and antimony and progress toward achieving these standards is being made with respect to VOCs. Natural attenuation progress is expected to continue and should reduce VOC concentrations below required standards in one to nineteen years (based on ROD estimates). Compliance with ambient water quality criteria in the wetland surface water will be verified following attainment of drinking water standards in the overburden and bedrock aquifers. Air monitoring is routinely performed during well sampling as part of worker safety. Air quality is not an issue at this site.

IV. Summary of Site Visit

On March 12, 1999, EPA and NHDES inspected the Town Garage/Radio Beacon Site specifically to determine if any changes had occurred at, or in the vicinity of the Site which would bring the protectiveness of the remedy into question. James DiLorenzo from EPA and Paul Lincoln from NHDES participated.

As expected, significant residential development of the former wooded hillslope area of the Site has occurred. A subdivision, known as Saddleback Road, has been completed and includes thirteen (13) home sites of approximately 3/4 to 2 acres. As a condition for development, the

Town of Londonderry required the developer, Stonemark Investments, Inc., to supply public water to the subdivision. A conversation with the Town's Engineer, Gary Tendler, confirmed that all homes have been connected to the public water supply. A written agreement between Stonemark Investments, Inc. and the Town of Londonderry, dated December 11, 1996, was reviewed and includes provisions for long-term access to, and maintenance of, monitoring wells.

Site observations confirmed statements in the most recent annual monitoring report that well MW-2S had been destroyed and MW-2D damaged, although it remains functional. It appears that the destruction/damage was a result of ongoing construction activities at the Site. EPA sent a letter to the Town of Londonderry dated March 5, 1999 requesting that well MW-2S be replaced and MW-2D be repaired, as necessary. Consistent with the terms of the Unilateral Administrative Order, the Town is required to respond to this request within thirty (30) days. It is expected that the Town will request Stonemark Investments, Inc. implement the necessary repairs consistent with the above agreement. All repairs must be made no later than the next monitoring period, November 1999. All other monitoring wells are undamaged.

V. Areas of Non-Compliance

None noted.

VI. Recommendations

Based on this five-year review and information contained in the most recent groundwater monitoring report, the following actions are recommended:

1. The current annual groundwater monitoring program should continue;

2. Monitoring wells MW-2S and MW-2D are critical monitoring locations and should be replaced and/or repaired, as necessary, to effectively monitor continued progress towards achievement of remedial objectives;

3. The Groundwater Management Permit should be maintained to ensure that potable wells are not installed within the plume area; and

4. Surface water in the wetland area directly downgradient of the plume should be sampled once drinking water standards are achieved to ensure compliance with CWA $\oint$ 304(a).

VII. Statement of Protectiveness

I certify that the remedy selected for the Town Garage/Radio Beacon Site remains protective of human health and the environment. The recommendations listed in Section VI above are necessary to ensure this protectiveness finding remains valid.

VIII. Next Five-Year Review

The planned date for this five-year review was September 1997. Managing regional priorities delayed execution of this review.

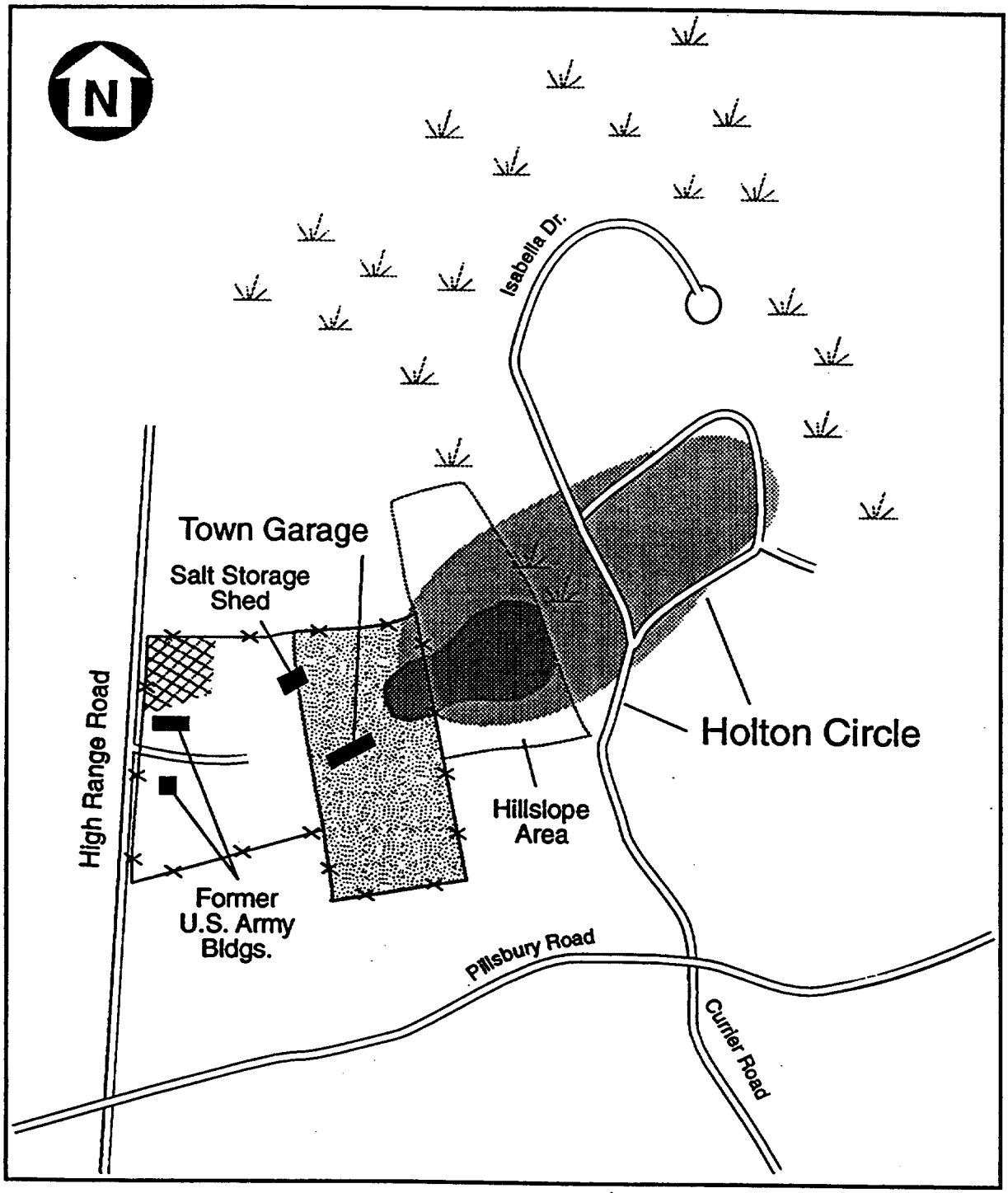
Consistent with OSWER Directive 9355.7-02A, the next five-year review will be conducted by September 2002.

3/31/99

Patricia L. Meaney, Director
Office of Site Remediation and Restoration, Region 1

Date

Fig. 2 – Holton Circle Site Map



Drawing Not to Scale

Wetlands

Town Garage Property Fence

Radio Beacon Area

Approximate Bedrock Contamination Area (1992)

Approximate Overburden Contamination Area

Town Garage Area